II) REMARKS

This is submitted in response to the Office action dated November 18, 2004. A request to extend the time to respond by two months until April 18, 2005 is enclosed.

The Examiner rejected claims 1, 3 ,4, 8, 9, 21 and 22 under 35 USC 102(b) as being unpatentable over Renner et al., U.S. Patent No. 5,679,945 . Claims 2, 15, 16 and 18 have been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Vos (USP 4,849,927). Claims 5 and 6 have been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Sanderson (USP 5,467,082). Claim 7 has been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Scott et al. (USP 6,272,562). Claims 10 and 11 have been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Wobber et al. (USP 5,235,642). Claims 12-14 have been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Vos and in further view of Puchek et al. (USP 6,496,595). Claim 17 has been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Green (USP 5,954,583). Claim 19 has been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Vos in further view of Rakoff (USP 5,886,894). Claim 20 has been rejected under 35 USC 103(a) as being unpatentable over Renner in view of Vos in further view of Beigel et al. (USP 6,249,212). The Applicant has amended claim 1 in order to more clearly define the invention, and traverses the instant rejections and respectfully requests reconsideration in view of the following remarks.

The present invention is directed towards the use of the known Wiegand protocol popular in use for access control systems. In particular, the present invention utilizes the existing Wiegand infrastructure to support readers and panels with extended data communications functionality. The prior art Wiegand data infrastructure is used in many applications and has already been installed in numerous premises, but has limitations on the amount and types of data that can be transmitted. In particular, the known Wiegand systems require each reader device to have its own dedicated set of (five) wires that connect it directly to the control panel (or other system controller). The existing Wiegand systems are essentially one-way data transmission systems (reader to panel),

except for the control line that operates a door latch or LED display. Existing Wiegand systems do not provide for any error detection. These hardware and software limitations are addressed in the present invention.

The present invention provides for an extension of the known Wiegand protocol that is implemented on the prior art Wiegand systems such that a Wiegand reader in the present invention may be used on an existing Wiegand infrastructure and operate with the controller with appropriate software changes to the controller. As such, prior art (non-extended) Wiegand readers may coexist on the same platform with the Wiegand readers of this invention, thus ensuring backwards compatibility. As explained in the specification, the controller will determine if a particular Wiegand reader operates under this invention (i.e. is capable of using the Wiegand data protocol extension) and communicate with that reader accordingly.

Thus, the present invention, as set forth in claim 1 as amended herein, is an access control security system that has a control panel and a plurality of access control groups. Each access control group is interconnected to the control panel on an independent multi-wire data bus. Each access control group has at least one access interface unit that includes data output means for transmitting data onto the data bus to the control panel, data input means for receiving data via the data bus from the control panel, and processing means, interoperating with the data output means and the data input means, for operating data transfers over the data bus. The processing means is adapted to generate a data message for transmission onto the data bus via the data output means, the data message comprising a Wiegand message field in accordance with the Wiegand protocol. Notably, at least one of the access interface units is further adapted to implement an extended data field along with the Wiegand message field. The control panel is adapted to communicate with each access interface unit to determine of the access interface unit is capable of implementing the extended data field. If the control panel determines that the access interface unit is not capable of implementing the extended data field, then the control panel communicates with that access interface unit in accordance with only the Wiegand protocol. If, however, the control panel determines that the access interface unit is capable of implementing the extended data field, then the

control panel communicates with that access interface unit in accordance with the Wiegand protocol and the extended data field. Support for the amendment to claim 1 that recites the communications between the control panel and the access control unit in order to determine if it is capable of handling the extended protocol under this invention is described for example at page 11, line 1-17.

The prior art Renner reference, relied on by the Examiner in rejecting this claim 1, does not teach or suggest in any way the invention of claim 1. The Renner reference describes an intelligent card reader that is intended to replace existing magnetic stripe readers, bar code readers, and Wiegand effect readers without the need for retrofitting of existing computer systems which are coupled to the existing readers. The card reader can replace the aforementioned readers and remain compatible with their existing interfaces by emulating a magnetic card reader, a Wiegand effect reader, or a bar code reader. The card reader can accept smart cards having different functions and/or software interfacing techniques, thus allowing different types of smart cards can be used in the same reader.

In particular, a Wiegand effect card that is coded in a particular manner can be replaced with a smart card onto which the same code is stored. The corresponding Wiegand effect reader, such as that shown in Figure 1B of the patent, is replaced with the intelligent card reader. The intelligent card reader reads the preprogrammed code from the smart card, converts the code into Wiegand effect signals, and transmits the Wiegand effect signals over wires to an external device which normally expects to receive such signals.

In order to emulate a Wiegand effect signal, a microcontroller includes a software program which makes use of various internal timers to generate Wiegand type pulses on lines designated W0 and W1 in Figure 2. For example, if a Wiegand effect card containing the code "42318" is replaced with a smart card having this code stored in an appropriate file on the card, the card reader reads this code from the smart card and generates pulses on wires W0 and W1 corresponding to the code "42318." The external device coupled to lines W0 and W1 receives this signal and returns a confirmation signal on line C through terminal 212. This signal may be received by microcontroller 200 via

an I/O line and used to energize red LED 223, green LED 224, or buzzer 225 in order to communicate to the user that the transaction was authorized or not.

The Renner device is intended to replace an existing Wiegand device and behave exactly like an existing Wiegand device with respect to the control panel such that the control panel is unaware that the reader is a smart card reader and not a standard Wiegand device. The Renner system does not utilize an extension of the Wiegand protocol nor does it relate at all to the prior art problems that the present invention Wiegand protocol extension relates to, as described herein and in the specification of the present application. In addition, the control panel of the Renner system is a standard prior art panel that communicates per the Wiegand protocol, but does not in any way have an extension of the protocol as claimed herein. Thus, the control panel is unable to communicate with the interface device in Renner to determine if it is able to use the protocol extension, and then communicate with the interface device in accordance with the extension (if the interface device is able to) or not, as recited in claim 1 as amended. Renner, in fact, wants to be able to use the existing Wiegand protocol with a smart card device without having to change anyting in the existing Wiegand system whatsoever. Of course, in the present invention, while the hardware (5-wire) infrastructure is kept the same, the invention requires a modification to the operational software of the control panel in order to properly communicate with the extended Wiegand device.

The passage relied on by the Examiner to support the rejection is as follows:

> Security system 505 compares the received Wiegand effect signal (corresponding to the access code) and, if it matches a code prestored in its memory, sends a confirmation signal back to ICR 503, which preferably turns on a green LED.

Col. 10, lines 36-40. The Examiner also refers to Figure 5, and states:

> In Fig. 5 of Renner et al., the Wiegand-based security system sends a message C to either ICR1 or ICR2; in order to send this message, it must have obtained the address of the ICR from the message the ICR sent to the system.

Office action, page 3. The Applicant respectfully disagrees with this interpretation of the Renner reference and the attempt to read it on the claims of the present invention. Figure 5 shows that ICR1 and ICR2 have separate and discreet sets of data wires that lead to the Wiegand-based security system 505. As known in the art, each ICR will have a separate 5-wire interface; this is a limitation of the prior art addressed by the present invention. Thus, it would be improper to infer that it must have obtained the address of the ICR from the message the ICR sent to the system since (1) there is no support provided for such inference; and (2) the Renner system appears to operate exactly as a prior art system does; i.e. with separate 5-wire interfaces for each device. Therefore Renner does not require an addressing scheme in any data transmitted over any one single bus since there is only one device present on each bus. As such, Renner does not use any extended Wiegand protocol and the inference of the use of an addressing extension is improper.

Thus, the invention as recited in amended claim 1 is patentable over the cited Renner reference for at least the reasons provided. Likewise, claims 2-22, which depend from claim1, are also patentable for at least the same reasons.

Applicant thus submits that the entire application is now in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree with the Applicants' position, a personal or telephonic interview is respectfully requested to discuss any remaining issues and expedite the eventual allowance of this application.

Respectfully submitted,

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